



**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY 14 SEPTEMBER 2011**

SUBJECT **REGIONAL SOURCE CONTROL PROGRAM – 2010 ANNUAL REPORT AND FIVE-YEAR IMPLEMENTATION PLAN (2011-2015)**

ISSUE

To present the activities and accomplishments of the Regional Source Control Program (RSCP) in 2010 and to introduce a five-year implementation plan for the program covering the period 2011-2015.

BACKGROUND

The purpose of the RSCP is to reduce the amount of contaminants that industries, businesses, institutions and households discharge into the Capital Regional District's (CRD) sanitary sewer systems in order to protect the marine receiving environment, sewage collection and treatment facilities, biosolids quality and public health and safety.

This staff report presents the *Regional Source Control Program 2010 Annual Report*, dated August 2011. A summary of program activities and accomplishments in 2010 and next steps for 2011 and beyond is attached as Appendix A. A full copy of the report is available from the Environmental Sustainability department upon request.

At the Core Area Liquid Waste Management Committee meeting of 22 September 2010, staff were directed to bring back a new five-year implementation plan for the RSCP, covering the period 2011-2015, for approval in 2011. A summary of the proposed RSCP implementation plan for 2011-2015 is attached as Appendix B.

ALTERNATIVES

That the Core Area Liquid Waste Management Committee:

1. (a) recommend to the CRD Board that the *Regional Source Control Program 2010 Annual Report* be received for information and forwarded to the Ministry of Environment;
 (b) direct staff to forward copies of the above report to the Environmental Sustainability Committee; the Saanich Peninsula Wastewater Commission; the Ganges Sewer Local Service Committee; the Highland Water and Sewer Local Services Committee; the Magic Lake Estates Water and Sewer Local Services Committee and the Port Renfrew Utility Services Committee for information and comment; and
 (c) recommend to the CRD Board that the five-year implementation plan for the RSCP, covering the period 2011-2015, be approved; or

2. (a) recommend to the CRD Board that the *Regional Source Control Program 2010 Annual Report* be received for information and forwarded to the Ministry of Environment;
 (b) direct staff to forward copies of the above report to the Environmental Sustainability Committee; the Saanich Peninsula Wastewater Commission; the Ganges Sewer Local Service Committee; the Highland Water and Sewer Local Services Committee; the Magic Lake Estates Water and Sewer Local Services Committee and the Port Renfrew Utility Services Committee for information and comment; and
 (c) direct staff to prepare an alternative five-year implementation plan for the RSCP, covering the period 2012-2016 for approval in the spring of 2012.

FINANCIAL IMPLICATIONS

The core 2011 budget for the RSCP is \$1,329,610.

ENVIRONMENTAL IMPLICATIONS

Sewage effluent data collected at the main CRD outfalls since the last detailed trend analysis suggest that previously reported decreasing trends for key contaminants have continued or reached a point of no significant change. Significant reductions in key contaminants have been achieved since the RSCP was put in place in 2003, most notably a 98% reduction in mercury. The next long-term analysis of effluent trends is scheduled for 2012.

A key metric for the RSCP is the level of business compliance. In the past year, the overall percentage of regulated businesses with proper waste treatment installed reached 96%, the highest level achieved to date.

SERVICE DELIVERY IMPLICATIONS

The RSCP went through significant change in 2010 as a result of the implementation of the Service Delivery Review. Following a subsequent re-organization, the program became part of the new Environmental Partnerships division with a mandate to deliver coordinated environmental programs that engage residents, businesses, industries, institutions and local government in the stewardship, protection and well-being of the environment in the Capital Region.

There have been some early successes following the review including information sharing and coordinated RSCP inspections with two other programs within the new division – Cross Connection Control (CCC) and Demand Management (DM). For example, RSCP staff worked closely with Demand Management to expand inspection services offered to include water audits for local businesses and institutions, moving closer to a “one window” approach for business.

CONCLUSION

In addition to achieving record high business compliance levels, maintaining a consistent inspection presence, further developing successful outreach initiatives and continuing decreasing trends for key contaminants in 2010, the RSCP recorded some early successes under its new mandate with the Environmental Partnerships division. These included information sharing, coordinated inspections and combined messaging with the Demand Management and Cross Connection Control programs.

RECOMMENDATIONS

That the Core Area Liquid Waste Management Committee:

1. recommend to the CRD Board that the *Regional Source Control Program 2010 Annual Report* be received for information and forwarded to the Ministry of Environment;
2. direct staff to forward copies of the above report to the Environmental Sustainability Committee; the Saanich Peninsula Wastewater Commission; the Ganges Sewer Local Service Committee; the Highland Water and Sewer Local Services Committee; the Magic Lake Estates Water and Sewer Local Services Committee and the Port Renfrew Utility Services Committee for information and comment; and
3. recommend to the CRD Board that the five-year implementation plan for the RSCP, covering the period 2011-2015, be approved.

Core Area Liquid Waste Management Committee – 14 September 2011
Re: RSCP – 2010 Annual Report and Five-Year Implementation Plan (2011-2015)
Page 3

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Attachments: 2

Regional Source Control Program

2010 Annual Report

CRD | Environmental Sustainability



The Capital Regional District (CRD) Regional Source Control program (RSCP) is a pollution prevention program that aims to protect public health and safety, the local marine environment and the District's sewage collection and treatment facilities. The effectiveness of this protective program relies on reducing business, institutional and household contaminants that enter the sanitary sewer system at the point of discharge to sewer, rather than removing them at the end of the sewage collection system. Source control is an essential first step in any sewage treatment strategy.

Since the adoption of a Sewer Use Bylaw in 1994, the RSCP has established a comprehensive permit system for larger industries, developed effective regulatory codes of practice (COP) for businesses and institutions – all supported by innovative outreach initiatives. As a result of this combination of strategies over the years, there have been dramatic improvements in the quality of effluent discharged to our marine environment and reduced impacts on our sewage collection and treatment facilities.

The current program meets or exceeds Canadian best practices for source control and the CRD is a nationally recognized leader in this field. Other districts and municipalities across the country have used the RSCP as a standard to measure success.



Program Overview

Implementation of a region-wide source control program began in 1994 with regulation of larger industries under a permit system, followed by the adoption of the first regulatory codes of practice (COP) for businesses and institutions in 1999. By the end of 2005, eleven COP's were developed, adopted and implemented to regulate discharges from approximately 2,000 businesses. The regulatory basis for the RSCP is the Sewer Use Bylaw. The program works to ensure that the bylaw and its associated policies and procedures are applied consistently within all CRD sewage collection areas.

Source control is recognized as a cost effective and sustainable method of protecting:

- the local marine environment near the CRD's sewage outfalls.
- sewage facilities belonging to the CRD and its member municipalities.
- treatment processes against upsets.
- the health and safety of sewage workers and the general public.
- the quality of sewage sludge and biosolids.

The RSCP went through a period of significant change early in 2010 as a result of the implementation of the CRD Service Delivery Review. Following a subsequent re-organization, the program became part of a new division, Environmental Partnerships (EPar), with a mandate to deliver coordinated environmental programs that engage residents, businesses, industries, institutions and local government in the stewardship, protection and well-being of the environment in the Capital Region.

Priority Contaminants:

Key substances in wastewater, including chemicals and groups of chemicals that may be harmful to the environment, sewage collection and treatment systems, or constitute a danger to human health

Codes of Practice:

Specific business sector regulations that require the installation of treatment systems or the adoption of waste management practices to minimize the discharge of wastewater contaminants to sewer



A “One Window” Approach to Business

Some early successes following the move to EPar included information sharing and coordinated inspections with two other programs within the new division – Cross Connection Control (CCC) and Demand Management (DM). RSCP staff worked closely with Demand Management to expand inspection services offered to include water audits for local businesses and institutions. This past year, RSCP staff participated in water audits for the University of Victoria and Thrifty Foods and helped local businesses reduce their water consumption through assessing their eligibility for a \$5000 once-through cooling water rebate. It is anticipated that there will be increased collaboration between these programs, municipalities, business groups, institutions and other agencies in 2011 and beyond.

Building Partnerships

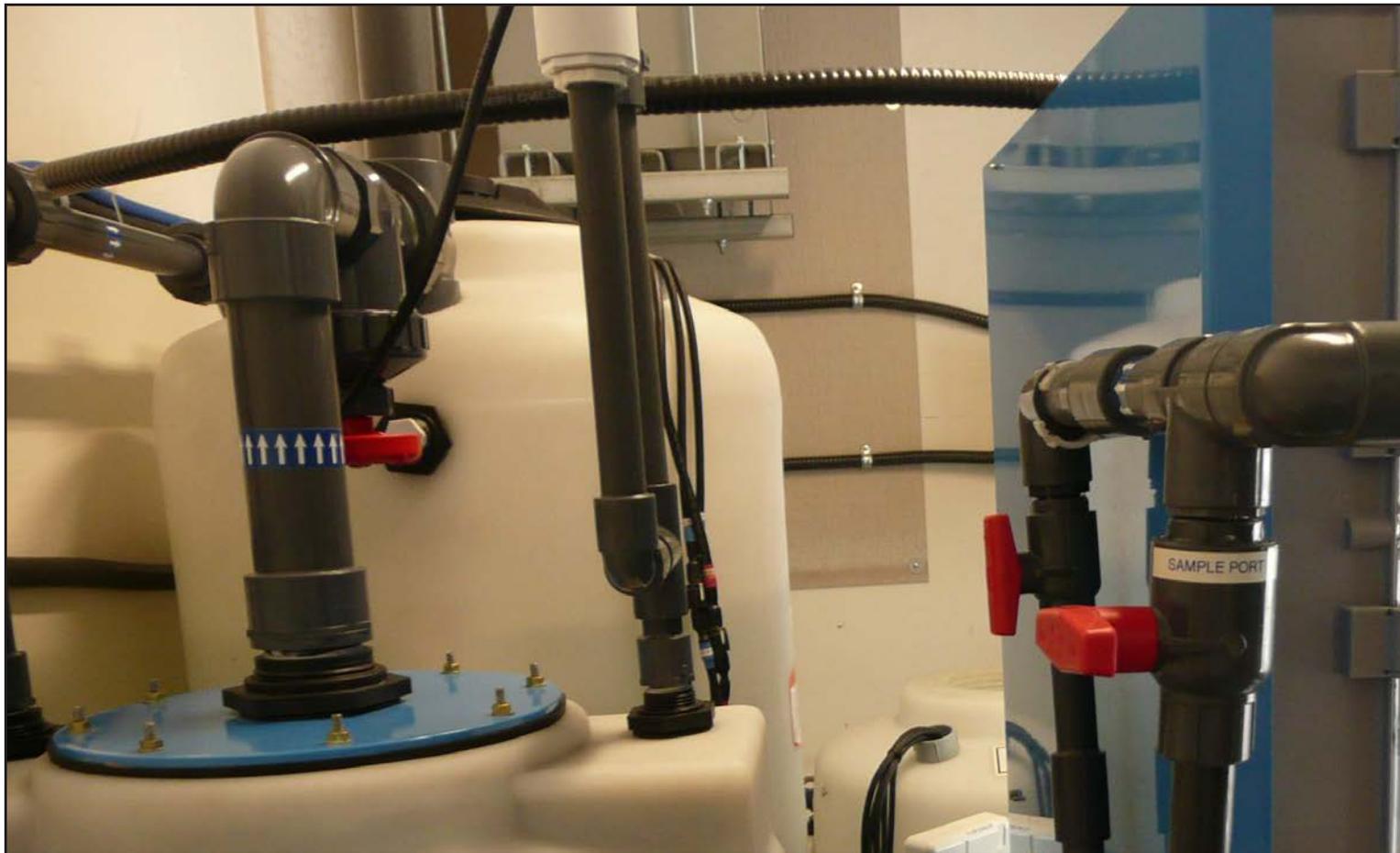
RSCP staff have developed strong working relationships with many agencies during the program’s implementation. Whether sharing information to resolve mutual collection system problems, or receiving input from stakeholders, communication and collaboration with other agencies has been essential in ensuring ongoing program effectiveness. In addition to strengthening existing partnerships, 2010 also saw the beginning of some new partnerships within the industrial, commercial and institutional (ICI) sector. RSCP staff also made inspection-notification agreements with external agencies; local municipal plumbing inspectors and Vancouver Island Health Authority (VIHA) health inspectors.

Permit:

A regulatory document with site-specific treatment and/or waste management requirements for industries or businesses discharging significant wastewater flows or high amounts of contaminants to sanitary sewer.

Authorization:

Authorizations are regulatory documents issued to businesses discharging low amounts of contaminants or where discharges to sanitary sewer are predicted to have a low impact on sewage collection and treatment facilities and the marine environment.



Keeping Pace with a Changing Region

The program continues to grow and expand, changing with the needs of the region. At present, the RSCP is finalizing a five-year plan, which is aligned with the EPar division's recently completed strategic plan. The five-year plan aims to address changes in wastewater discharge trends within the ICI and the residential sectors. This plan will include reviewing and modifying regulations and developing outreach initiatives to address emerging issues such as the management of waste pharmaceuticals and personal care products.

Evolving Science & Technology

The RSCP invests in research and investigates the application and effectiveness of new technologies.

In 2010, a study was launched to:

- * review the RSCP priority contaminants list and make recommendations for possible modifications
- * identify potential priority contaminant sources
- * develop reduction strategies and targets

To measure the success of such strategies, staff will use outfall monitoring data collected by the CRD's Wastewater and Marine Environment Program and the results of future contaminant trend analyses.

This past year, the RSCP also sponsored a project through the Royal Roads Environmental Science Undergraduate program, to evaluate approaches for managing "emerging contaminants of concern".

As part of our service to customers, the RSCP is currently examining ways to pilot and test new or alternate pre-treatment technologies that may allow businesses to meet our regulations more effectively.



Speaking to All Audiences

Building on the residential outreach initiatives initially launched in 2007 as part of the “Clean Water Begins at Home” campaign, RSCP staff continued to develop and maintain an outreach and education presence throughout 2010. These initiatives have overall goals of linking residents’ actions at home to their potential environmental, economic and social impacts and to promote personal actions that reduce the amount of contaminants discharged to the sanitary sewer. Community-based social marketing techniques are built into this approach using prompts and tools to help people make positive changes by providing them with clear, desirable practices that can be easily accomplished. Furthermore, RSCP staff used social media tools to promote environmentally responsible behaviours and to connect with an audience less knowledgeable of source control practices, targeting males 18-34 years of age. Through the new online platform “Sustainable U”, participants learned about positive practices during a series of interactive YouTube videos. Then they spread the word by creating their own response videos, sharing what they do “to be a more sustainable U” with others.

Ongoing training programs ensure that RSCP staff can provide additional information on other CRD programs at outreach events.

8,021
= kilograms of unused medications
collected in the region for proper
disposal in 2010

Program Accomplishments & Highlights - 2010

Business Compliance Levels

In the past year, the overall percentage of regulated businesses with proper waste treatment installed reached 96%, the highest level achieved to date. COP sectors maintained high levels for installation and use of proper waste treatment measures. Permitted industrial facilities and facilities operating under authorizations also maintained high compliance levels.

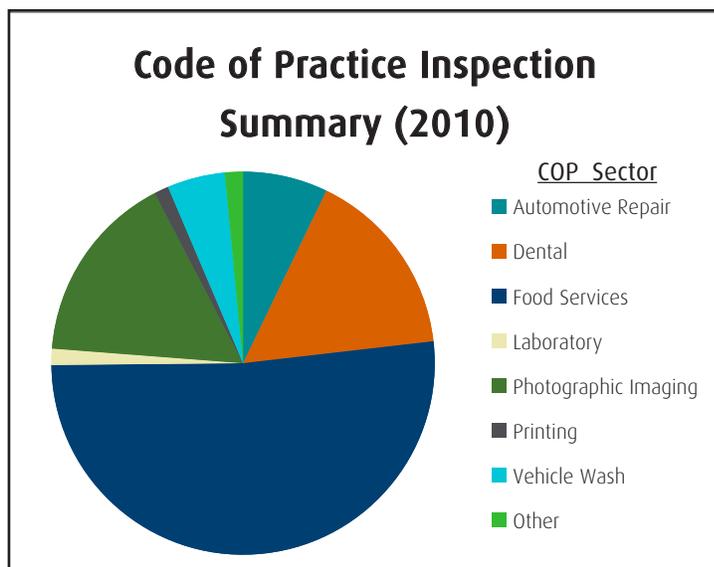
- * 100% use of proper waste treatment measures was maintained in seven code sectors (treatment works installed or offsite waste management used): photographic imaging, dental, laboratory, dry cleaning, carpet cleaning, fermentation and recreation.
- * Greatest increase in the level of proper waste treatment (15%) was recorded within the vehicle wash sector - following additional inspections in 2010.
- * A record high level of proper waste treatment was attained in the food services sector (95%); this was an additional 3% increase since 2009. Full compliance with the COP (88%) was the highest recorded to date for this sector.



* % of regulated businesses using proper waste treatment or offsite waste management to reduce the amount of contaminants discharged to sewer.

Inspections & Monitoring

Regular and consistent inspection, outreach and monitoring by RSCP staff is key to maintaining high compliance levels. In 2010, RSCP Staff:



- * Successfully implemented a new COP inspection plan focusing on businesses discharging priority contaminants to sewer for the second consecutive year and met or exceeded most inspection targets.
- * Completed all permit inspections scheduled at the beginning of 2010 within the year. Inspected permitted sites discharging priority contaminants at least one or two additional times.
- * Met all new monitoring targets during the first year of a new monitoring plan focusing on priority sectors and contaminants.
- * Achieved the goal of collecting audit samples from each permitted site twice per year.

Contaminant Reductions

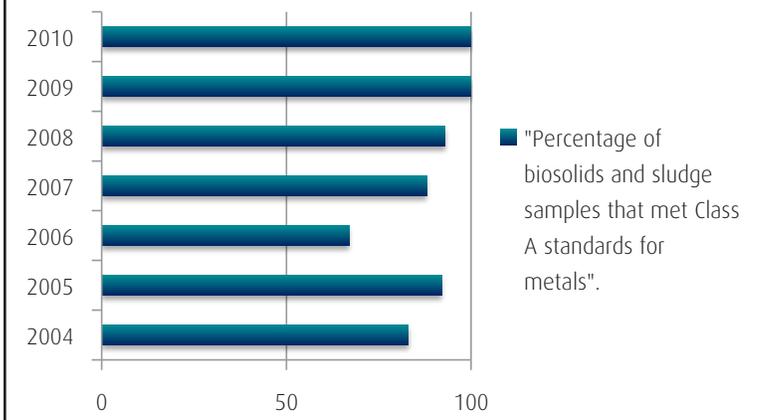
Sewage effluent data collected at the main CRD outfalls since the last trend analysis (2008) suggest that previously reported decreasing trends for key contaminants have continued, or reached a point of no significant change. The next long-term analysis of effluent trends at CRD outfalls is scheduled for 2012.

Core Area Contaminant Reduction Summary (1993- 2008)

Contaminant	Load Reduction	Amount Reduced (kg)
Mercury	-98%	88
Silver	-89%	264
Lead	-80%	685
Cyanide	-74%	588
Toluene	-69%	125
Oil and Grease	-39%	642 (tonnes)

In 2010, the percentage of treatment plant biosolids and mixed liquor samples that met the Province of BC's highest standards (Class A) for metals reached 100% for the second consecutive year.

Summary of Biosolids and Sludge Results



98
= percentage of mercury no longer discharged into core area sewers since RSCP's inception

100
= percentage of biosolids and mixed liquor produced at CRD sewage treatment plants in 2010 that met provincial Class A Standards for metals

The observed significant decreasing trends in contaminants are a result of ongoing consistent application of source control regulations, inspections and promotion of best management practices through program outreach initiatives. This highlights the important role that the source control program plays, and will continue to play, in achieving wastewater contaminant reductions and protecting sewage collection and treatment facilities and the marine environment throughout the region.



Residential Outreach

- * RSCP staff maintained the promotion of the “Clean Water Begins at Home” campaign’s three key messages (fats, oils and grease reduction, surfactant reduction and medications return) through print, radio and web-based advertisements and public outreach events.
- * In 2010, the CRD continued to record a higher medication return rate per capita than most regional districts in the province (second only to the Sunshine Coast). Over eight tonnes of medications were collected—representing a 164% increase over the amount collected in 2007.
- * The social media campaign, “Sustainable U: Source Control 101”, came to a successful completion in April 2010. This was the first corporately-supported social media campaign developed and launched as a pilot by the CRD. The campaign reached over 41,000 residents and, in particular, made source control messaging accessible to males 18-34 years of age throughout the CRD.
- * Under a partnership developed in 2009 with Shaw Ocean Discovery Centre in Sidney, staff launched the “Ocean is Our Home” exhibit at the Centre in June where it ran until October 2010. The exhibit consisted of a hands-on display linking residents’ actions at home with the potential impacts on the local marine environment - highlighting the protective role of source control and the CRD’s other sustainability messages. The target audience for the exhibit was school age students and the general public.

Business Outreach

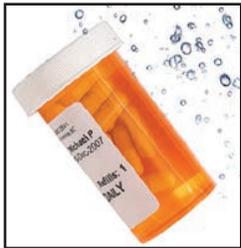
- * Stakeholders from the food services and automotive repair sectors were engaged to help develop outreach tools for promoting compliance and commitment to source control practices. Each of the two sectors participated in an open dialog session regarding source control, demand management and cross connection control inspections, audits, outreach and other issues. These sessions helped to renew partnerships and foster the “one-window” approach to working with businesses. New outreach materials, including posters and videos, are now under development for these sectors in 2011
- * The 2010 CRD EcoStar award event was co-sponsored by RSCP and staff participated in the evaluation committee for the Water Stewardship, Community Environmental Leader and Youth Leader categories

2000
 = approximate number of
 businesses and institutions
 throughout the District that
 are regulated under the
 Sewer Use Bylaw



Program Partnership Initiatives

In 2010, RSCP staff commenced coordinated inspections with two other EPar programs and formalized inspection-notification agreements with external agencies such as municipal plumbing inspectors and Vancouver Island Health Authority (VIHA) health inspectors. By expanding the number of programs and jurisdictions covered in a single inspection, local businesses spend less time dealing with regulators, and are better able to understand how the various programs fit with one another. Conversely, regulators are better able to create positive relationships with their clientele, improve internal and multi-jurisdictional information sharing, and offer efficient, thorough and flexible services to the ICI sector.



Vancouver Island Health Authority (VIHA)

In 2010, RSCP staff initiated discussions with home and community care professionals from VIHA with the goal of promoting proper disposal of unused and expired medication within the home care sector. Collaborative development of appropriate outreach materials is ongoing in 2011.



Camosun College

In 2010, RSCP staff extended their knowledge and experience to third-year plumbing apprentices at Camosun College's Interurban campus through a scenario-based presentation on the subjects of effluent treatment, source control and emerging contaminants of concern. This outreach was well received by the college, resulting in a return invitation in 2011.



Shaw Ocean Discovery Centre, Sidney BC

The "Ocean is Our Home" exhibit was successfully launched in partnership with the Shaw Ocean Discovery Centre – running from June to October 2010. The exhibit consisted of a hands-on display for school age students and the general public, linking common household activities with potential impacts on the marine receiving environment and highlighting the protective role of source control and other CRD programs. This exhibit moved to the Victoria International Airport in November 2010, initiating a new partnership with the Victoria Airport Authority.



Program Partnership Initiatives cont'd...



Metro Vancouver

RSCP and Metro Vancouver both hosted one on-site meeting each during 2010 to share experience and knowledge gained through implementation of their respective source control programs and to discuss and resolve common source control issues. Metro Vancouver is planning a return visit to the CRD in 2011.



Royal Roads University

This past year, the RSCP sponsored a project through the Royal Roads Environmental Science Undergraduate program, to evaluate approaches for managing “emerging contaminants of concern”. Staff from the CRD’s Wastewater and Marine Environment program contributed in-kind consultation in developing the scope as well as providing technical expertise to the students. The research findings and deliverables will be presented in August, 2011.



Internal Cross-Training

In an effort to expand and improve the quality of service to both residents and the ICI sector, RSCP staff regularly participated in EPar cross training or information sessions in 2010. Through this training, ES staff from various programs coach, inform, and update other staff about their particular initiatives. The training provides RSCP staff with knowledge to support residents and businesses in accessing relevant information and resources. Increased awareness of Cross Connection Control (CCC) operations by RSCP staff has been particularly useful in helping facilities such as automotive repair businesses, schools and restaurants prepare and transition into compliance with the CCC bylaw.



Established Partnerships

Municipalities: Municipal staff continued to provide plumbing and building information, water use data and other information to RSCP staff to assist in the preparation of permits, authorizations and COP equipment installations in 2010. This information sharing has been enhanced over the past two years with more direct lines of communication having been established between RSCP staff, municipal staff, business owners and contractors. There were two significant incidents involving fats, oils and grease blockages in municipal sewer infrastructure reported to the program. RSCP staff worked collaboratively with municipal staff to confirm problem areas, investigate potential sources of excessive oil and grease discharge and prepare reports on the findings.

Department of National Defence, Formation Environment : Since 2000, RSCP staff have attended regular “working group” meetings to share information on wastewater quality and pollution prevention measures at DND facilities that discharge into CRD sanitary sewers, municipal stormwater systems and the marine environment. Discussion of water conservation and cross-connection control issues has recently been included. RSCP staff also continue to receive information from Formation Environment staff regarding CFB Esquimalt’s wastewater discharges to sanitary sewer in 2010.

Post-Consumer Pharmaceutical Stewardship Association: RSCP staff maintained a relationship with the national, not-for-profit, Post Consumer Pharmaceutical Stewardship Association. This organization assisted with the launch of the CRD’s Medication Return campaign and continues to provide statistical information regarding provincial medication return rates and general information in support of the RSCP’s pharmaceutical reduction initiatives.

96 = all-time high percentage of business compliance (2010). Levels have increased steadily since the program began.



Looking Ahead to 2011

The main actions and activities for the program in 2011/2012 include:

- * Complete and present a program implementation plan for the period 2011 – 2015.
- * Implement a new COP inspection plan for 2011, including investigations to resolve compliance issues within the vehicle wash and printing sectors.
- * Investigate the regulatory approach used for the carpet cleaning, recreation facility and fermentation COP sectors.
- * Implement a COP monitoring plan focusing on the carpet cleaning, dry cleaning, dental and food services sectors.
- * Implement and distribute food services and automotive outreach tools developed in consultation with stakeholder representatives.
- * Incorporate initiatives to promote source control practices related to household cleaners under the “Clean Water Begins at Home” banner.
- * Implement “Sustainable U - Source Control 201” to further promote source control practices to youth.
- * Engage recreation centre stakeholders to develop outreach tools that will promote source control best management practices for the sector.

**SUMMARY OF REGIONAL SOURCE CONTROL PROGRAM IMPLEMENTATION PLAN
2011-2015**

The proposed RSCP five-year implementation plan consists of four main strategies which are aligned with the main elements of the Division's Strategic Plan and Business Plan. The four main strategies are as follows:

- coordinated outreach and education
- coordinated inspections and monitoring
- program review and metrics
- research and emerging technologies

The RSCP implementation plan is designed to assist in the delivery of Environmental Partnerships' mandate and to help the CRD prepare for the initiation of advanced sewage treatment in the core area.

Main Strategies and Activities	Timeline
1. Coordinated Outreach and Education	
<ul style="list-style-type: none"> • Develop, through stakeholder consultation, new business outreach materials for Industrial, Commercial and Institutional sectors incorporating a "one-window" approach to service delivery. 	ongoing
<ul style="list-style-type: none"> • Enhance and update four existing "Clean water begins at home" residential outreach campaigns including: <ul style="list-style-type: none"> - Medications return—expand to home and community care and investigate container labelling - Launch Source Control 201, "Sustainable U", social media campaign 	ongoing 2011 2012
<ul style="list-style-type: none"> • Develop and launch new "Clean water begins at home" initiatives including: <ul style="list-style-type: none"> - Promote alternative household cleaners through "Clean Green" - Promote proper hazardous waste and "hobby waste" disposal 	ongoing 2011 2013
<ul style="list-style-type: none"> • Develop Education plans for K-12, post-secondary and trade schools, incorporating RSCP themes and information from other CRD programs 	2012
<ul style="list-style-type: none"> • Enhance relationships with municipal and other agency staff by establishing procedures that facilitate efficient information exchange 	2012
<ul style="list-style-type: none"> • Update business and residential components of RSCP website, incorporating interactive features and a "one-window" approach 	2015
2. Coordinated Inspections and Monitoring	
<ul style="list-style-type: none"> • Coordinate inspections and audits for all Partnerships programs <ul style="list-style-type: none"> - Demand Management, Cross Connection Control, Onsite Systems, Stormwater Source Control (Saanich Peninsula) 	2012
<ul style="list-style-type: none"> • Focus inspection efforts on priority Industrial, Commercial and Institutional sources <ul style="list-style-type: none"> - Hospitals, metal platers, ship waste treatment, vehicle washing, photo imaging, printing 	ongoing
<ul style="list-style-type: none"> • Enhance all RSCP monitoring plans (annual reviews) for: <ul style="list-style-type: none"> - Permits, authorizations, codes of practice, key manholes 	ongoing
3. Program Review and Metrics	
<ul style="list-style-type: none"> • Maintain existing program components to ensure Liquid Waste Management Plan commitments are met 	ongoing
<ul style="list-style-type: none"> • Review program measures of success 	2012
<ul style="list-style-type: none"> • Review, develop and adopt standard operating procedures for all RSCP activities 	2013
<ul style="list-style-type: none"> • Review, update and amend the Sewer Use Bylaw (coordinate with reviews of other program bylaws) 	2014
<ul style="list-style-type: none"> • Coordinate data management and database development with all Partnerships programs 	2015

4. Research and Emerging Technologies	
<ul style="list-style-type: none"> • Research priority contaminants, sources, reduction strategies and targets <ul style="list-style-type: none"> - Investigate use of molybdenum-based corrosion inhibitors in heating/cooling systems and potential local impacts - Develop a reduction plan for phthalates (plasticizers) - Research use of copper-based algaecides and local impacts - Investigate local use of nano-silver products and potential impacts 	ongoing 2011 2012 2013 2014
<ul style="list-style-type: none"> • Research and pilot test new pre-treatment technologies for effectiveness at achieving contaminant reductions and meeting regulations 	ongoing